

# Let's Design Tomorrow. Today. For you.

Power electronics.  
Electric machines.  
Electric drives.

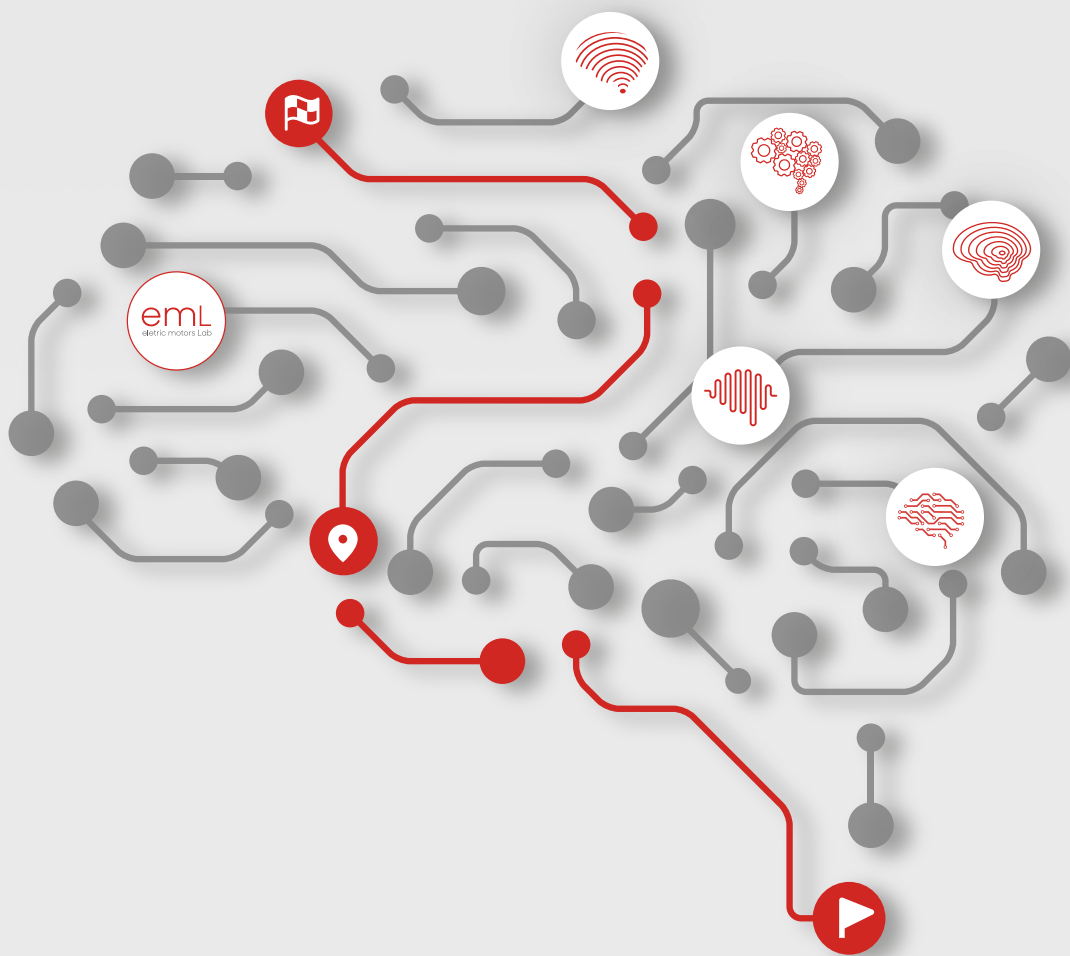


**RAWPOWER®**

We engineer tomorrow, today.

# Where do we **begin**?

**Raw Power** is specialized in design and consultancy for **static energy conversion, electric machines** and **power electric drives** for industrial applications.



Connecting  
Brains to Power.

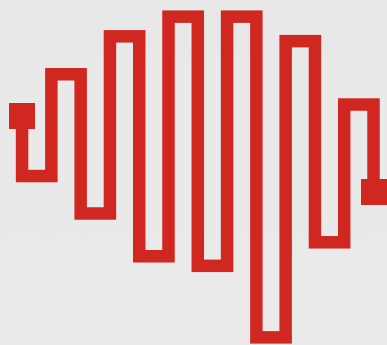


**RAWPOWER**  
We engineer tomorrow, today.



### **Full-Service Project.**

We follow you at every stage, from feasibility study to product industrialization.



### **Single Project.**

You can choose the services according to your needs. Our professionalism remains unchanged.



### **Consultancy and Certifications.**

We offer our technical support and consultancy for developing custom solutions, optimizing every phase of the process and to transform your challenges in real opportunities.

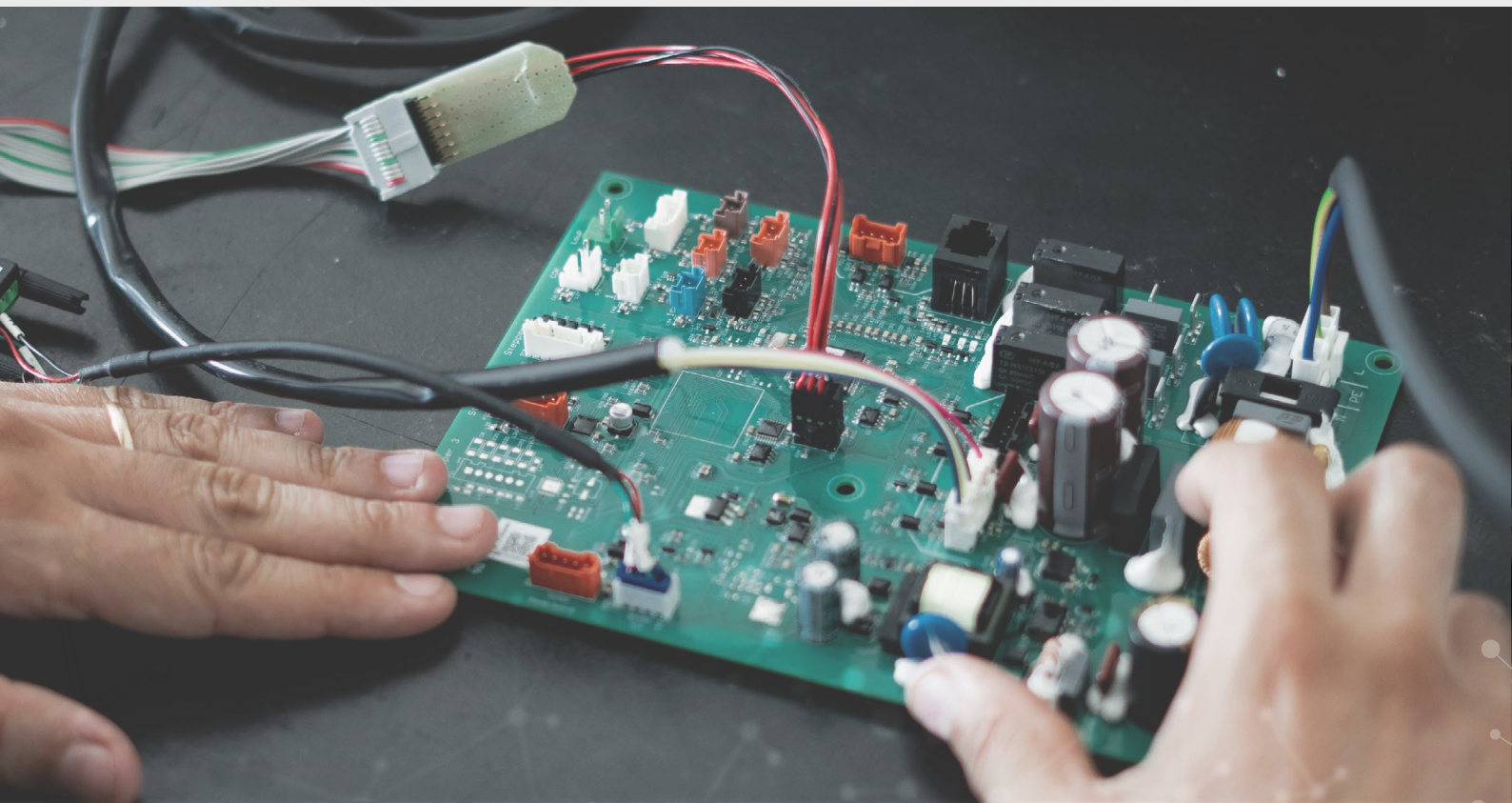


# Power Electronics and Electric Drives

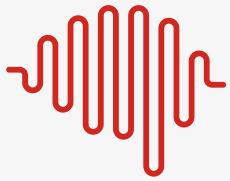
**Design of static converters and power electric drives for different industrial environments.**

We can follow you along the entire project, from **requirements** preparation, passing through the phases of choosing **critical components**, preparing electric schematics, PCB layout, **firmware** programming, **prototyping**, **validation** tests, **certification**.

- Design and prototyping of different power converters: AC/DC, DC/AC, AC/AC and DC/DC;
- Performance analysis of power converter with the help of **digital-twin** in simulation environment;
- Focus on clients' needs: offer of traditional solutions with silicon devices and **innovative solutions** with new **WBG devices**, (SiC or GaN) in order to address new technology challenges of **efficiency** and **power density**;
- Development of **cutting-edge control strategies** for power electric drives (MTPA, FW, MTPV, FOC, etc.);
- Know-how in developing **sensorless control** strategies focused on cost reduction and **increment of application reliability**;
- **Dedicated testing areas** and test benches for validation of power converters and drives.







# Electric Machines Laboratory



**Equipped laboratory for testing of electric machines and power drives.**

More than ten years of experience in **electric motors and power drives tests**. We are specialized in customized setups for testing and bench tests according to **standardized test methods** (EN 60034-1, EN 60034-2-1, Regulations (UN/ECE) No. 85 and 134, IEC 61800-9-2) or according to **customized test specifications** with **LAT calibrated** measuring chains.

- Test benches with **B5 flange** in four power sizes:
  - 5 [Nm] – 2.2 [kW] for high-speed tests;
  - 50 [Nm] – 12 [kW] up to MEC 132;
  - 500 [Nm] – 45 [kW] up to MEC 225;
  - 3,000 [Nm] - 300÷400 [kW] in **back-to-back** configuration;
- Technical support for the design of adjustment mechanisms;
- Temperature controlled test environment and **liquid-cooled cooling system** with a thermal power up to 33 [kW];
- Test report release with data processing and test results.



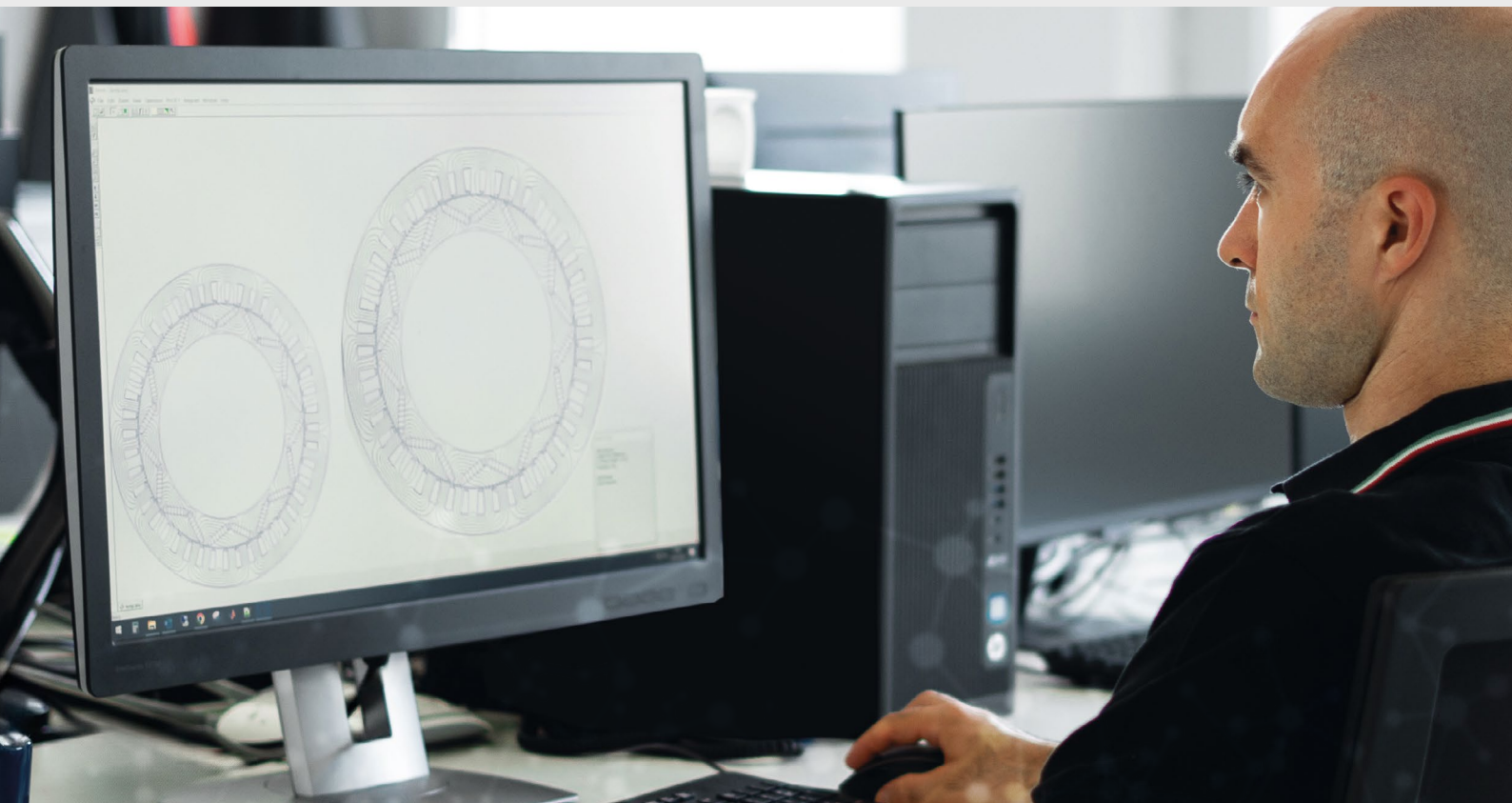


# Electric Machines Design

## **Electric machines design for different industrial applications.**

Reliable partner with many years of experience in electric motors design for industrial applications related to traction vehicles, household appliances, off-road vehicles. We can design typologies and configurations of **traditional rotating motors** (induction, brushless with and without magnets) to **innovative solutions** from the **design** point of view and/or **materials** (linear motors, tubular motors and additive manufacturing).

- **Feasibility studies** and preliminary design;
- Detailed electromagnetic design with the definition of the operative maps and control strategies, mechanical design with release of executive drawings, material choice and definition of the bill of material, thermal validation of the motor;
- **Technical support** to the client who is looking for potential manufacturers for first motor prototypes and production of first series;
- **Test bench validation** of motor's performance.







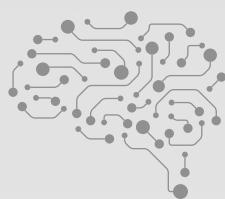
# Mechatronics

## **Mechatronic design and integration for electric drives.**

We make our experience available in design of **customized test setups** or studies of **innovative mechatronic solutions** starting from defined needs and requirements.

- Custom **test bench design** for electric motors;
- **Diagnostic and prognostic activities on electric machines** along with the support of software modelling of the system to reduce analysis' timing and cost;
- **Electromagnetic sensors** design with **energy harvesting** option;
- Design and **mechanic modelling** of components and complex systems such as automated machines, kinematics study, mechatronic systems.





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